



VOLUME 74 ISSUES 4,5,6  
April, May, June 2023

## PPRAA Club Officers

President	<b>Kyle Damon KD0TRD *</b>
Vice President	<b>Derek Brown KØATV *</b>
Secretary	<b>LD Steiner W0XLD *</b>
Treasurer	<b>Dick Kohlhaas W5UDM *</b>
Ø-Beat Editor	<b>Jerre Redding, WAØBCM</b>
Webmaster	<b>Douglas Nielsen, N7LEM</b>
Past President	<b>LD Steiner W0XLD</b>
Board	<b>Anthony Mitchell KE0LQK *</b>
Board	<b>Dave Phillips N0DMP *</b>
Board	<b>George Shaiffer KEØQCC *</b>
Board	<b>Dave Molter AD0QD *</b>
Board	<b>Jon Cashatt KJ0CFW</b>
Board	<b>Craig Walker KEØRGP</b>
Board	<b>Ken Hook K0KWH</b>
Board	<b>Michael Walter KEØTWK</b>
Board	<b>John Bloodgood KD0SFY</b>

\* In final year of 2-year term

+ One year officer position

All officers can be contacted at: [boardmembers@ppraa.org](mailto:boardmembers@ppraa.org)

## Monthly Ham Breakfast

**Golden Corral  
1970 Waynoka Road Saturday, 1 July 2023**

Join us between 8:00-9:30 AM

All are warmly invited to come on down and join us!

**PPRAA Board Meeting (June 10) at Perkins**

**3298 E. Platte Ave., Colorado Springs, CO. 80909**

– There will be both an online meeting via Zoom and in the restaurant. The business meeting starts at 7 PM, but get your dinner and beverage of choice and check in any time after 6 PM for a social hour. Club members check your email for info or email [Officers](#) to receive the Zoom information.

**Postponed to 2025: 2020 ARRL Rocky Mountain Division Convention – Hamcon Colorado 2020**

– More info [here](#).

### **Field Day**

– Saturday, 24 June 2023 1200 to Sunday, 25 June 2023 1200  
– See Field Day tab above

### **Denver Radio Club Ham Fest**

– Sunday August 27, 2023 (0900-1300)  
– Adams County Fairgrounds  
– Brighton, Colorado  
– More info [here](#).

### **Albuquerque Duke City Hamfest and Convention**

– September 15-17, 2023  
– More info [here](#).

**Announcing the ARRL Colorado section net beginning in 2023.**

Fellow Colorado Section Amateur radio enthusiasts,

As section manager I desire to have a better connection to ARRL members and non-members in the Colorado section. I visit as many in person events as time allows and also make myself available for attending virtual meetings (i.e. Zoom). This "net" will hopefully be a place that Colorado hams can ask questions of ARRL leadership, request help, guidance, club support and technical support. This can also be a place where Colorado hams can ask why is the ARRL important and why should I join?

The net will meet on the second Monday of each month at 7:30 pm Mountain time. Our first net will be on January 9th 2023.

I've chosen an ARRL Affiliated Club/Repeater system to host this net each month. The Fun Machine WE0FUN was chosen as it is a Colorado based system that has dedicated links in Colorado with little "regular" traffic. WE0FUN provides paths into the net via analog RF, Echolink, DStar, YSF, NXDN, P25, DMR and M17.

See [http://www.we0fun.com/?page\\_id=304](http://www.we0fun.com/?page_id=304) for analog repeaters and locations.

The digital reflectors are as follows;

Allstar - Node 28368

Echolink - \*CANONCTY\* 363976

DStar - XRF815B, XLX815B, DCS815B or REF815B

TGIF - DMR 815

Brandmeister DMR - 310815

YSF - US CO WE0FUN 53927

P25 - Talkgroup 10209

NXDN - Talkgroup 31081

M17 - 815B

I look forward to hearing you all.

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Feel free to forward to other clubs as well.

John Bloodgood, KD0SFY  
PIC, Colorado Section - ARRL

## **PPRAA 2023-04 board meeting minutes**

**Date/Time:** Monday, 2023-04-10 1830 local

**Location:** Perkins, 3295 E Platte Ave, Colorado Springs CO 80909

**Attendees:** Derek/K0ATV, Dave/N0DMP, Jon/KJ0CFW, Kyle/KD0TRD, Ken/K0KWH, George/KE0QCC, Dick/W5UDM, LD/W0XLD, Jerre/WA0BCM, Anthony/KE0LQK, Doug/N7LEM, David/AD0QD, John/KD0SFY

### **Agenda:**

- Silent keys
  - Leonard Smith in California, known by Anthony
- Secretary report: LD/W0XLD
  - Volunteer list
    - Club station move out
      - Derek/K0ATV
      - LD/W0XLD
      - Kyle/KD0TRD
      - Dave/N0DMP
      - Jon/KJ0CFW
      - Ken/K0KWH
      - Jim/KD0KQL
      - George/KE0QCC
      - Michael/KE0TWK
    - Selling raffle tickets at the LARCFest
      - Doug/N7LEM
      - Diana/KC0NPP
      - Randy/KD0SPP
      - Pat
  - Membership: 237 licensed, 6 unlicensed, 137 ARRL members
  - March meeting: 45 attendees, 6 online
  - David moved to accept report; George seconded.
- Treasurer report: Dick/W5UDM
  - Membership dues for family membership were received from "Susan Kircher" but no address or call sign came with it; Dick hopes we will see her at a meeting soon to get her full information.
  - Jon moved to accept report; George seconded.
- VE team report: Jon/KJ0CFW
  - Ken moved to accept report; Derek seconded.
- Webmaster report: Doug/N7LEM
  - Some old links on the website fixed; now it's current.

- LARCFest: raffle tickets sold; many positive comments heard about relocation of Megafest to Pueblo. Doug also heard interest in joining a social event on Friday evening before Megafest.
  - David moved to accept report; Derek seconded.
- Zero Beat report: Jerre/WA0BCM
  - Jerre working on Zero Beat newsletter; made a final request for pictures and articles.
- PPARES report: John/KD0SFY
  - No Skywarn training dates received yet.
  - Daily weather nets planned to begin on May 1.
  - World Amateur Radio Day on-air event from Apr. 11-25. The theme is "Human security for all." The actual World Amateur Radio Day is Apr. 18.
- VP report: Derek/K0ATV
  - Megafest plans: ideas of having a banquet with speaker were nixed because the per-seat cost was prohibitive, but Derek is still looking for possible discounts for a "vacation package" for overnight stays. Also, Friday evening social at Brue's is still in the works. If any such plans are finalized, he'll send them to Doug for inclusion on the website.
- President report: Kyle/KD0TRD
  - Skip call signs around the room to discuss club station
    - Time at the general membership meeting is already tight, so introductions/call signs will be limited to new members/first time attendees and officers/board members.
    - Derek will describe club station plans at upcoming membership meeting.
  - Club "garage sale?"
    - George volunteered to store towers, but would like some 4x4s to set them on.
    - Derek volunteered to research the Platte flea market: prices, hours, etc. Tentative date set for loading up in Ellicott on evening of Friday May 19; sell at the flea market on Saturday May 20.
    - Derek volunteered to announce this to the club; also suggested putting out an inventory list to the PPRAA reflector. Club members could have first opportunity to purchase items, pick them up at the flea market.
  - Club swag shop (JSE Repair)
    - Dave/N0DMP to be point of contact to set up the shop for nametags, jackets, other items.
    - LD to provide line art to Dave.
    - Derek made motion to release club logo artwork to JSE Repair for this purpose; Kyle seconded; vote passed.
  - Club embroidery: Joseph Hodge/KF4TBZ is offering to do embroidery of club logo also.

- Youth DXpedition
  - Don has requested \$200 donation for youth DXpedition, but at last meeting he said it was not going to continue due to lack of personnel support. Kyle will reach out to Don for clarification if it will happen again.
- POTA committee
  - Ken has set up AF0S in POTA logbook site already
  - Doug has set up a [pota@ppraa.org](mailto:pota@ppraa.org) email box, which Ken can check
  - LD volunteers to collect ADIF log copies after they are submitted to POTA
  - Ken will kick off this committee with his presentation on POTA at the May membership meeting
  - Committee can ensure PPRAA event dates are not scheduled in conflict with POTA event dates, as well as schedule club activities to support POTA events (like "support your parks" weekends)
  - Other volunteers for committee and planning upcoming events: Kyle, Derek, Dave
- New field day site: Palmer Park
  - "Pre-approved," has bathrooms, has a pavilion, grass field, can park RVs overnight, \$150 for the weekend
  - Bathrooms *would* be available to attendees and left open all night if we were to rent for two days
  - A few board members pointed out limited antenna space in the area David had checked out, but there's a big field to the west of the baseball diamond that would work fine for guyed masts. David said he will check if that field would be available to us.
  - If the field is available for antennas, and parking lot next to baseball diamond is available for RVs, LD made a motion to approve reimbursement to David so he can pay the pavilion rental deposit immediately. Derek seconded. Vote passed.
- 10th STEAMMM Literacy Festival - April 22
  - Derek, Dave, and John volunteered to support this event
  - LD volunteered to send the Falcon AeroLab presentation outline, hands-on activities, and handouts to Dave so they can use some of those ideas if they want.
- Next workshop: April 27, PPLD 21C - Roll-up J-pole
  - Room reservation is 1800-1930.
  - Price is set at under \$20; will be announced in general membership meeting.
  - Only BNC connector cables planned to be included.
  - LD to take signups at general membership meeting.

- Volunteer opportunities
  - April workshop: Kyle if schedule permits, LD, Dave, Ken, David, Anthony, George if schedule permits
  - 10th Annual STEAMMM Literacy Festival: Derek, Dave, John
- Other new business
  - If we want to do *temporary* on-air events in lieu of a permanent club station location, George is investigating an opportunity at Venetucci Farms. The current lessee of the site is getting approval for occasional Saturday/Sunday use with RVs, go-box stations. George's contact is Nikki, +1 719 322 1750.
  - David got a contact from Harrison District 21; they would like to have an event for homeschoolers (similar to Falcon AeroLab events), starting in the fall, for junior and senior high students.
- Adjourn
  - Ken made the motion; Derek seconded; vote passed.

**Email update 1:** Derek communicated with Deep Space Exploration Society to find a taker for the towers at the Ellicott club station. A vote was conducted by the board to donate the towers to DSES on the condition that they provide transportation to move them off the site in Ellicott.

The vote passed with Dave, Craig, Kyle, Doug, Jon, David, Derek, and LD voting in favor.

**Email update 2:** The AFOS call sign has expired, and Ray opted not to continue as its trustee. Jon volunteered to work with FCC to determine the transferral and renewal processes, and Kyle volunteered to be the trustee for the call sign. A vote was carried out by email to get the renewal process underway. Kyle made the motion to approve himself as the trustee, Derek seconded.

The vote passed with Kyle, Derek, Ken, Dave, Dick, Jon, George, and Craig voting in favor.

Hello PPRAA board,

I am preparing a summary of PPRAA's Winter Field Day activity to send to the PPRAA email reflector, with duplicates removed and a few mistakes corrected, but here are some numbers to get us started:

- Total contacts: 774 (with duplicates removed)
  - 4 digital
  - 770 SSB
- Stations: 2
  - Yaesu FT-DX10 with EFHW and 20-6m Hexbeam antennas (Ken/K0KWH)
  - Yaesu FT-991A with G5RV antenna (Derek/K0ATV and LD/W0XLD)
- Power: solar, battery, generator backup
- Logging: Cloudlog over WiFi
- Bands/modes worked:
  - 80m LSB: 22

- 80m JS8: 1
- 40m LSB: 190
- 40m JS8: 3
- 20m USB: 349
- 15m USB: 154
- 10m USB: 55
- Time on the air: 22 out of 24 hours
- States worked: 48 out of 50 (missed Alaska and New Mexico)
- Provinces worked: 7 + "NT"/"TER" (Northern Territories)
- Sections worked: 77 out of 85 + 1 DX
- Operators:
  - Ken/K0KWH: 327
  - Derek/K0ATV: 291
  - LD/W0XLD: 53
  - Jim/KN4UDV: 39
  - Kyle/KD0TRD: 18
  - Cory/WD0JKZ: 10
  - Dave/N0DMP: 9
  - Richard/AC0HW: 8
  - David/AD0QD: 6
  - David/[Boy scout]: 6
  - Dick/W5UDM: 4
  - Rick/[Falcon]: 2
  - Richard/KF0KTU: 1

Before I send this summary out to the PPRAA reflector, can anyone refresh my memory on Rick's call sign (from Falcon) and David the boy scout?

Thank you!

LD / W0XLD



**PPRAA**

Pikes Peak Radio Amateur Association

Below are the new licensees with callsigns from the May VE session for Secretary and Treasurer tracking for new membership certificate purposes. The full VE report will be submitted closer to our June board meeting.

All are new Technicians:

Jason Anderson – KFØMTT

Raymond Graham – KFØMQG

Jacob Holstun – KFØMRE

All this is possible thanks to our great group of Volunteer Examiners!

73

Jon Cashatt, KJØCFW

VE Team Leader

Pikes Peak Radio Amateur Association

Laurel VEC

## AARRL Clean Signal Initiative on the horizon

By Dan Romanchik, KB6NU

In recent message to his Northwest Division membership, Mike Ritz, W7VO, described a new program that he's gotten the ARRL to take on—the Clean Signal Initiative. He writes:

“After a few months gathering support from the amateur community for the project, the ARRL Clean Signal Initiative (CSI) is finally getting off the ground. The Board’s Programs and Services Committee approved the concept several months ago, and since then I have been canvassing some of the best known RF engineers in amateur radio to get their support and input. As a result, the team will be conducting our first Zoom call next week to lay out the next steps for the project. All I can say at this time is that there are some amateur radio “heavy hitters” behind this, and I believe will be a game changer for the ARRL.

For those that may be unaware of this project, here is a synopsis (or at least my vision):

1. The CSI gets the ARRL formally in the “technical standards” business. (Other technical organizations already do it: IEEE, UL, ASTM, and SAE, and others.) The ARRL currently tests new products to informal standards, with no real hard benchmarks for manufacturers to meet, other than the minimal standards outlined in FCC Part 97.307.
2. Creates and incorporates documented “best practice” standards and testing methodologies to ensure commercial amateur radio transmitters and amplifiers meet not only minimum FCC requirements for signal cleanliness, but push the envelope.
3. These new standards can be “home grown”, or passed through the IEEE, but I think it’s important they be also branded as “ARRL Technical Standards.”
4. Test new commercial transceivers and amplifiers against these standards.
5. Certify the transmitters and amplifiers that pass the standards: “CSI certified by the ARRL.”
6. Work with manufacturers to ensure compliance of those that don’t. (Market pressure will drive this.)
7. Market the program to the amateurs through QST.
8. Work with manufacturers and social media experts to create training materials to teach hams how to set up their equipment to ensure the cleanest transmitted signals. (This education part is key!)

Rob Sherwood, NC0B, of Sherwood Engineering, who is most well-known for his [ranking of receiver performance](#) (<http://www.sherweng.com/table.html>), is part of this effort. You can see a video of a talk that he gave recently to the Sutton & Cheam Radio Society by going to <https://youtu.be/IioApKRecl> Error! Hyperlink reference not valid.

Based on my knowledge of how IEEE standards committees work, I stressed that the initiative should make every effort to get as many stakeholders—including manufacturers and users—involved as possible. Involving so many people may be cumbersome at times, but standards require consensus for them to be effective, and the only way to do that is to get everyone involved. I'd suggest that if you feel that you have something to contribute that you contact Mike directly. His email address is [w7vo@arrl.org](mailto:w7vo@arrl.org)**Error! Hyperlink reference not valid.**

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (<https://KB6NU.Com/study-guides/>), and often appears on the ICQPodcast (<https://icqpodcast.com>). When he's not worry about how clean his signal is, he operates CW on the HF bands and teaches ham radio classes.

## Apply for a grant from the ARRL or ARDC

By Dan Romanchik, KB6NU

In our division director's September missive to the membership yesterday was this nugget:

ARRL IS CURRENTLY OFFERING GRANTS to fund amateur radio projects. This program, sponsored by the ARRL Foundation, is specifically for organizations and aimed primarily for education, licensing and support of ham activities. A special focus is on youth-related plans. We are now entering the last phase of this year's grant cycle, so the opportunity exists for your club or organization to submit a grant request. You can find the full details on the grant page of the ARRL web pages, check: <http://www.arrl.org/amateur-radio-grants>.

The ARRL accepts grant requests three times a year:

- February 1 – February 28
- June 1 – June 30
- October 1 – October 31

Since this is September 1, you have two months to get your request in. As I've written before, our club was awarded \$1,500 to help us put up a tower for a club station at the Ann Arbor Hands-On Museum. The money is available. Go get it!

## Get money from ARDC, too!

You can also get a grant for amateur radio projects from Amateur Radio Digital Communications (ARDC), the outfit I'm currently working for. ARDC grants money for projects that fall into one of the following three categories:

- Support and growth of amateur radio,

- Education, and
- Technical innovation.

ARDC has, for example, awarded grants to:

- An amateur radio club in Wisconsin (<https://www.ampr.org/grants-old/grant-chippewa-valley-arc-emergency-trailer-and-equipment/>) for upgrading their repeater systems and building an emergency communications trailer that they will also use to promote amateur radio in their area.
- A California high school (<https://www.ampr.org/grant-incorporating-constructivism-and-the-maker-mentality-at-california-high-school/>) whose computer science teacher will use the funds to purchase microcontrollers and transform his classroom into a maker space. With this equipment and facility, students will learn computer science by building their own projects.
- The M17 Project (<https://www.ampr.org/grant-m17-open-protocol/>), whose goal is to develop a new, open-source digital radio protocol by hams, for hams, and that is easy to understand and build on.

To be eligible for an ARDC grant, an organization must be a 501(c)(3) public charity or be sponsored by a 501(c)(3) public charity. Other eligible organizations include government entities, schools or universities, and international charities or nonprofits.

For more information on ARDC and how to apply for an ARDC grant, go to  
<https://www.ampr.org/apply>**Error! Hyperlink reference not valid.**

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (<https://KB6NU.Com/study-guides/>), and often appears on the ICQPodcast (<https://icqpodcast.com>). He recently joined ARDC as their Content Manager. Among his responsibilities is spreading the word about all the cool things ARDC is doing for amateur radio.

EDITORS:

You can find an image of the ARRL Foundation logo at <https://www.kb6nu.com/wp-content/uploads/2019/07/arrl-foundation-425x174.png>**Error! Hyperlink reference not valid.**

An image of the ARDC logo is at <https://www.ampr.org/wp-content/uploads/square-512.png>

**Subject:** [V7ARC] 2M Cubic Antenna

**Date:** Oct 8, 2022 8:24 PM

Good Evening, everyone.

As recommended by Aaron, KCØLGX....

Check out Fuzz the Pi Guy on YouTube. He's got lots of antenna videos.

Doug



– Congratulations to Derek, K0ATV (right), for being the first fox hunter to locate both transmitters. He picked an SDRPlay receiver as his first-place prize, and here he receives the PPRAA fox hunt trophy from the previous champion fox hunter, Derek, N0DCW (left).



**What is it?**

**The top Tuning section for the ISOTRON 160C.**

This article will also appear on our web site.

## **CHANGING VOLTAGE ON A REGULATED SUPPLY**

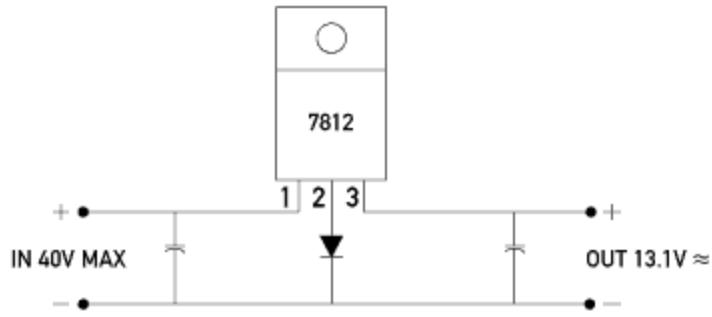
The last two articles were on a fixed voltage regulator and a fixed current regulator. However, there are times when a different voltage is needed. There are a couple of ways this can be done. This article will discuss one of the two ways.

For example, you want to use the regulator as a trickle charger for a 12 volt battery. Lawn tractors, generators and even cars and trucks that sit for a long time should have a charge on the batteries to keep it working year around.

Select a LM7812. You can use a wall wart that can handle at least .5 amps. If the wall wart claims 12 volts, it will probably be around 18 volts measured. Connect it to the LM7812 as in the schematic. Your output with lead #2 grounded will give you a slightly lower reading than 12 volt. This is not enough for trickle charging a 12 volt battery. Therefore, how can you raise it to 13.1 volts that is needed?

Simple, release lead #2 from ground. Then add a diode with the cathode to ground and anode to #2 lead. The forward direction of the diode will exhibit a resistance. This will increase the output voltage at lead #3. It will still be well regulated.

Depending on the diode used, will determine the output voltage. If it is not high enough, a second diode can be added in series with the first one.



(Input voltage should be 35 volts)

A wall wart power supply can be picked for just a few dollars surplus. The regulator can be bought for as low as 50 cents. 2 filter capacitors will vary in cost, but will most likely be under \$2.00 each.

The circuit can be built on a small board. You can use a fancy project box to house it, or a large shrink tube.

You can build the whole charger in less than an hour. It will save the batteries that sit unused throughout the winter to be ready for use in the spring.

73,  
Ralph WD0EHA

02-16

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OUR EMAIL LIST IS ACQUIRED BY PERSONS WHO HAVE CONTACTED US IN THE PAST.  
IF YOU DESIRE NOT TO BE CONTACTED PLEASE EMAIL YOUR REQUEST.

mailto: [wd0eja@isotronantennas.com](mailto:wd0eja@isotronantennas.com)



**ISOTRON 20  
A WORK HORSE FOR 20 METERS**

[www.isotronantennas.com](http://www.isotronantennas.com)

This article will also appear on our web site.  
**A VARIABLE VOLTAGE REGULATOR**

Our past articles have been about fixed regulated voltages. The voltages stay at a fixed value with a variation in load. Now that you are getting good at regulators, how about a variable regulated power source?

The LM-317 device works well and is simple to construct. These can handle up to 1.5 amps. It can regulate up to 35 volts.

You start with a 35 volt DC power source. However 15 volt is more practical. Most devices to be run or tested are 12 volts or lower. The LM-317 will vary the voltage from 1.2 volts up to your supply voltage value.

The LM-317 is adjusted with a variable resistor (R4) if desired. If there is no need to change voltage a fixed resistor can be used. Either resistors are of low wattage. The variable resistor is about 5K ohms. (See schematic below)

The output is + in reference to ground.

Many integrated circuits can not tolerate much variation in voltage. The LM-317 will maintain a constant voltage where ever you set it.

The circuit is simple and can be made in a short time.

The input source voltage is at lead #3. A 2200mf capacitor (C1) is filtering the input voltage. (See figure below)

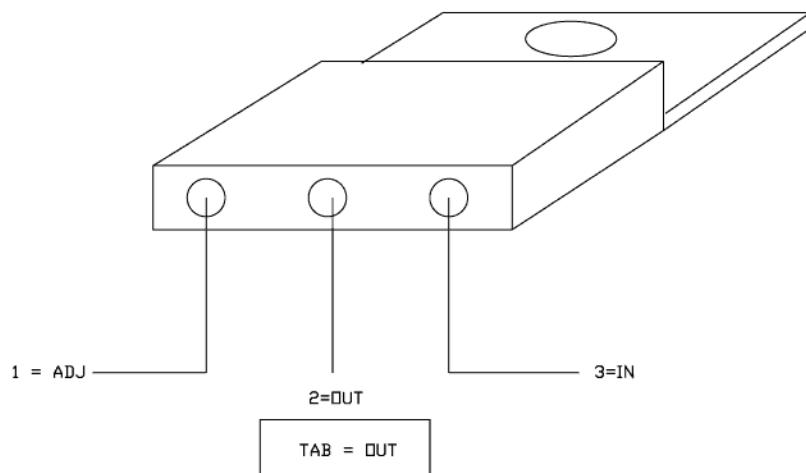
Lead #2 is the positive output voltage. There are some protection devices at the output. D2, D3, C6 and C13. This lead is also connected to the heat sink, if you choose to use one.

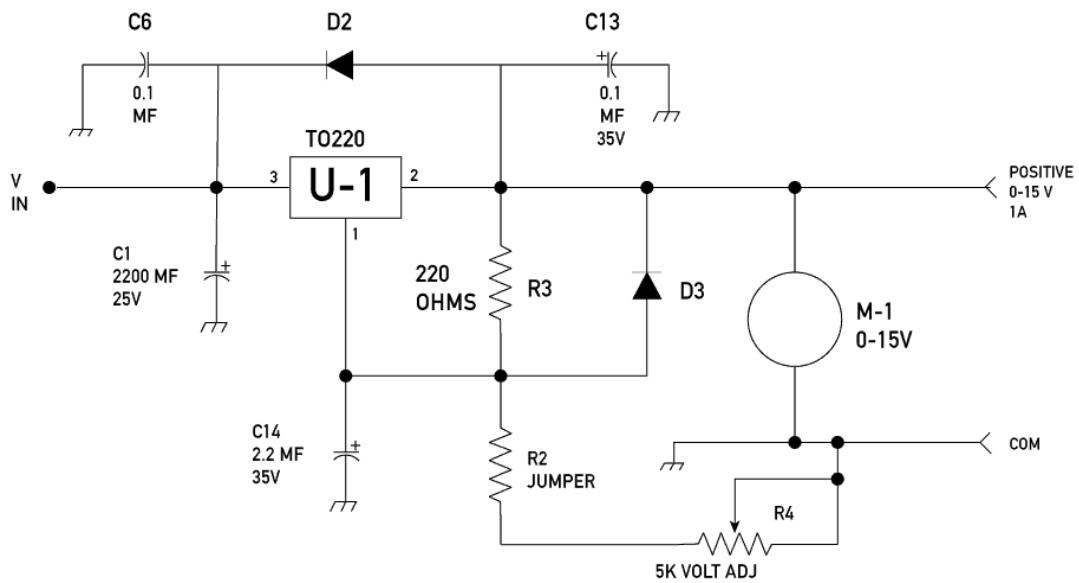
Lead #1 Is the control lead. R3 and C14 are to stabilize the control voltage.

If you want to get fancy, you can add a volt meter (M-1) to the circuit.

The result will give a variable, ripple free voltage source for little cost.

73,  
Ralph WD0EJA





03-16



### **6 Meters anyone?**

Coax and mast not included.Neither are the mountains.

### **Locating Noise and reducing Noise**

This article will consider a way to locating sources of noise. A follow up article will consider reducing the noise reception when operating.

Noise is easily generated by a variety of electronic devices. Switching power supplies are noise producing, especially the wall wart style. Other devices as dimmer switches , energy savors for appliances, lighting and more. These items have the potential of producing high noise levels particularly on 40, 80 and 160 meters.

One technique is to use a portable AM broadcast receiver to locate the noise. This is a good start due to the ferrite antenna in the radio. It is Bi-Directional, helping to locate the noise with the directivity of the antenna.

However, it would be more affective to locate the noise on the band you are wanting to use. Therefore, making a ferrite antenna that resonated on the band you are analyzing is not difficult, but can be more affective.

I needed to locate a power line noise that was some distance away. The antenna was made from seven ferrite cylinders. 1.125" long by .5625" (9/16") diameter. The cylinders were secured end to end by a plastic dowel through the bore of the cylinder. A small screw tapped on each side, then a fender washer that pulled the cylinders together by tightening the screws.

Next, a #28 magnet wire was rapped on and across the complete ferrite assembly at a 1/2" spacing. The two leads from each end were connected to a variable capacitor from a discarded radio.

Another winding is added at the center of the rod. At about 3 turns the impedance will average around 23 ohms. This winding is connected to a SO-239. Impedance is not critical since it is used for reception only. However, you may want to add a few more turns to match it closer to 50 ohms.

Depending on the range of the variable capacitor, you can tune to the 80 and 40 meter bands. When connected to a receiver, adjust the variable capacitor for maximum, signal or noise.

As you rotate the antenna you will have two strong sides and two nulls. This will give you a direction the noise is in. However, you have two choices since it is bi-directional. One direction will take you to the noise. Using it in your home can be done with a length of coax, long enough to make your measurement.

Using a portable HF receiver, you can search for noise at farther distances. I was able to locate a power line noise about 1/8 mile away.

You can acquire 1/2" ferrite rods in a variety of lengths. This will make it easier to construct and may offer more directivity.

A follow up article will be using the antenna for a lower noise reception.

73,  
Ralph WD0EJA

From ECHOLINK website:

What can I do with EchoLink?

EchoLink allows licensed Amateur Radio stations to connect to one another over the Internet. You can use EchoLink to connect your station (or your computer) over the Internet to other amateurs using the same software, and carry on a voice QSO. This greatly enhances the range and utility of mobile and portable VHF/UHF-FM stations, and also allows computer-equipped hams to access distant repeaters directly.

You can access EchoLink either with a radio or a computer. If you are in range of an FM repeater or simplex station equipped with EchoLink, you can use DTMF commands from your radio to access the EchoLink network. If you are a licensed amateur with an Internet-connected PC, you can access EchoLink stations directly from your PC.

How do I get started using it?

First, download the software from this Web site. Then, install the software on your PC, be sure you have a good Internet connection, and start it up to register your copy of the software. The final step is to provide proof of license so your callsign can be added to the system; see Validation for details. Then, you're ready to go.

Is EchoLink available for any platform other than Windows?

EchoLink is designed specifically to run under Microsoft Windows. Currently, there are no plans to offer versions of EchoLink for other platforms (except as noted below).

Is EchoLink available for smartphones and tablets, such as an iPhone or an Android phone?

Yes! An edition of EchoLink for the Apple iPhone and iPad is available, free of charge, at the App Store. For Android devices, please install EchoLink from Google Play.

73  
KF0OTE

## \$35 Application Fee

The majority of the FCC's revised Part 97 rules (adopted in December 2020) establishing new application fees become effective on April 19. The FCC announced on March 19 that the amateur radio application fees, including those associated with Form 605 filings, would not become effective

until the "requisite notice has been provided to Congress, the FCC's information technology systems and internal procedures have been updated, and the Commission publishes notice(s) in the *Federal Register* announcing the effective date of such rules."

The \$35 fee, when it becomes effective, would apply to new, modification (upgrade and sequential call sign change), renewal, and vanity call sign applications, as well as applications for a special temporary authority (STA) or a rule waiver. All fees will be per application. Administrative updates, such as a change of mailing, email address, or name, are exempt.

It is expected that such fees will not become effective before summer 2021. The FCC has stated that amateurs will have advance warning of the actual effective date, because it will publish such date in the *Federal Register*.

ARRL Volunteer Examiner Coordinator ([VEC](#)) Manager Maria Somma, AB1FM, said VECs and Volunteer Examiner (VE) teams will not have to collect the \$35 fee at exam sessions. Once the FCC application fee takes effect, new and upgrade applicants will pay the \$15 exam session fee to the VE team as usual, and pay the \$35 application fee directly to the FCC via the [Fee Filer System](#) or [License Manager System](#). Somma said this information was provided in a [VE Newsletter](#) distributed this past week. "Further news and instructions will follow when we have them," she said



# PPRAA 2 Meter Net Script

Version date: 2021-10-17

## At 1955 hours (7:55 pm), announce:

The Pikes Peak Radio Amateur Association 2 meter net will start in five minutes, at twenty hundred hours. This is [your call sign].

## Begin the net at 2000 hours (8:00 pm):

Calling all radio amateurs. This is the Pikes Peak Radio Amateur Association Thursday evening 2 meter net. Tonight's net control station is [your call sign] and my name is [your first name].

The PPRAA 2 meter net meets each Thursday evening at 20:00 hours [20 hundred hours] local time on the CMRG repeater, 147.345 MHz, positive offset, CTCSS tone of 107.2 Hz. In case of repeater problems or failure, the net will move to the 146.970 PPFMA repeater using CTCSS tone of 100 Hz, negative offset.

All amateurs are warmly invited to check-in and participate in this net. This is a directed net, so please go through Net Control to contact another station.

The purpose of this net is to announce PPRAA club business, upcoming events and activities, to discuss technical topics, to disseminate general information of interest to the amateur radio community and to practice formal net procedures. Please listen closely and follow the net control station's instructions.

When checking into the net, please give your call sign, your name, your location and if you have traffic for the net. Please speak slowly and clearly, Use correct ITU phonetics. It helps to repeat your call sign at the end of your check-in. Please be patient as net check-ins usually have a few doubles.

### Take check-ins:

PPRAA Club Officers and Board Members please check-in now. [Acknowledge all check-ins.]

Portable stations and mobiles please check-in now. [Acknowledge all check-ins.]

Now, stations with suffixes starting with Alpha through Foxtrot. [Acknowledge all check-ins.]

Stations with suffixes starting with Golf through Lima. [Acknowledge all check-ins.]

Stations with suffixes starting with Mike through Romeo. [Acknowledge all check-ins.]

Stations with suffixes starting with Sierra through Uniform. [Acknowledge all check-ins.]

Stations with suffixes starting with Victor through Zulu. [Acknowledge all check-ins.]

Now all stations, with suffixes starting with Alpha through Zulu. [\[Acknowledge all check-ins.\]](#)

This is the PPRAA Thursday evening two-meter net, with [\[your call sign\]](#) as net control. Now we'll go to stations with traffic. [\[Call on stations with traffic and lead discussion.\]](#)

Are there any additional stations wishing to check in? Please call now. [\[Acknowledge all check-ins.\]](#)

### **Round-robin discussion:**

This part of the net is for round-robin discussion. We will take comments from each station in turn, and we'd like to hear: have you been doing anything on the air, or working on any ham projects? Or perhaps you've heard some amateur radio news, or watched a YouTube video, you'd like to share with the net? Tell us what's new in your ham shack. [\[Call all checked-in stations in turn.\]](#)

[\[At least once every ten minutes:\]](#) This is the PPRAA Thursday evening two-meter net, with [\[your call sign\]](#) as net control.

Does anyone have any questions, comments, or requests for the net? Please call now. [\[Direct discussion.\]](#)

### **Wrap-up:**

Last call for late check-ins, please call now. [\[Acknowledge all check-ins.\]](#)

You are invited to attend the PPRAA club meetings on the second Wednesday of each month. Social hour begins at 1800 (6:00 pm); the meeting begins at 1900 (7:00) pm. You may attend online on a Zoom meeting, and the online invite is emailed out to all members, or you may now attend in person, at Billy's Old World Pizza, 308 South 8<sup>th</sup> Street in Colorado Springs. That's on the southwest corner of US-24 and 8<sup>th</sup> Street, and we look forward to seeing you there.

In addition, the PPRAA has an Amateur Radio Operator's breakfast meeting on the first Saturday of each month, at a location posted on the PPRAA.org website.

PPRAA VE exams are held on the second Saturday of each month. Location is the Pikes Peak Regional Office of Emergency Management building located at 3755 Mark Dabling Blvd. Testing is at 1000 hours and the tests are currently free to take.

Our net control operator for next week will be [\[call sign of following week's net control\]](#).

The Pikes Peak Radio Amateur Association wishes to thank all the stations that joined us this evening, and the CMRG for the use of their 147.345 and 448.100 repeaters. I hope to hear you all next Thursday evening at 2000 hours (8:00 pm) for our next PPRAA two-meter net.

This is [\[your call sign\]](#) closing the net at [\[time\]](#) with a total of [\[number\]](#) check-ins. We are now returning the repeater to regular amateur use. 73 everyone! [\[Your call sign\]](#), clear.



Figure: Steve/WGØAT operates HF phone from a SOTA summit in Colorado.

# PIKES PEAK RADIO AMATEUR ASSOCIATION AFØS



Radio \_\_\_\_\_ Confirming QSO \_\_\_\_\_, UTC

Mode \_\_\_\_\_ Frequency \_\_\_\_\_ MHz Your sigs: \_\_\_\_\_

Transceiver: \_\_\_\_\_ Antenna: \_\_\_\_\_

Operator: \_\_\_\_\_ Grid: DM78tt

Mailing address: PO Box 16521, Colorado Springs, CO 80935

Station Location: Ellicott, CO

PSE QSL TNX

Email: [station@ppraa.org](mailto:station@ppraa.org)

## **Major Events**

### PPRAA Awards Program

I have been the Awards/Recognition committee chair for almost 20 years. Awards have been issued when applied for. I just reviewed my logs and found I qualified for the VUCC award with 116 grid squares worked on 6 meters.

If folks will let me know what they have qualified for and fill out an excel log data sheet I will print out a very nice certificate.

Certificates can be printed for regular achievements or a goal you set for yourself.

Mike WV7T

[Wv7t@aol.com](mailto:Wv7t@aol.com)

**I am cutting back on my ham radio activities as other matters have arisen I must concentrate on.**

**These I will be available to provide:**

Technician and General class license tutoring

Hands on skills

Ham equipment and accessories

**Club asset manager**

**Award-Recognition program chairperson (We do have an awards program in PPRAA)**  
**Lots of advice**

I can be contacted at 719-229-8610 or [wv7t@aol.com](mailto:wv7t@aol.com)  
Mike WV7T



This was 2001 when PPRAA was 50 year ARRL affiliation.

This year 2021 is 70 year PPRAA affiliation.

Nice job folks.



The national association  
for AMATEUR RADIO

INTERNATIONAL SECRETARIAT OF THE INTERNATIONAL AMATEUR RADIO UNION

JIM HAYNIE  
WISB PRESIDENT  
JOEL M. HARRISON  
WISD1, FIRST VICE PRESIDENT  
KAY C. CRAIGIE  
WTPP, VICE PRESIDENT  
JOHN C. KANOIDE  
NAIM, VICE PRESIDENT  
RODNEY J. STAFFORD  
WIVFO, VICE PRESIDENT  
INTERNATIONAL AFFAIRS  
JAMES E. MCCOBB  
WILLU, TREASURER  
DAVID SUMNER  
KIZL, EXECUTIVE VICE PRESIDENT  
SECRETARY  
BARRY J. SHELLEY  
NIVZY, CHIEF FINANCIAL OFFICER

**QST**  
OFFICIAL JOURNAL

July 25, 2001

Pikes Peak Radio Amateur Assoc  
1420 North Gate Rd  
Colorado Springs CO 80921-3025

Dear Sidney 7/28/01

Congratulations on 50 years of affiliation with the ARRL! We have prepared a special certificate to commemorate this achievement. The certificate will be mailed to you directly, or sent to your Division Director. If a certificate is not enclosed with this letter, your Division Director, or another League Official, will present it to your club. The League Official selected for presenting the certificate to your club will contact your Club President or ARRL Liaison to make arrangements.

The League's affiliated clubs have been the backbone of organized Amateur Radio for more than 80 years. Amateur Radio classes, TVI committees, equipment exchange and camaraderie are just a few benefits offered to club members. Your club, the League, and Amateur Radio as a whole have grown during our long association. Who knows what's in the future? We do know, however, that clubs like yours will continue to meet and shape the challenges and opportunities the Amateur Radio Service encounters daily.

We hope the next 50 years of affiliation will be as enjoyable and beneficial as the first 50!

73,

*Margie Bourgoian, KB1DCO*  
Margie Bourgoian, KB1DCO  
Club & Educational Correspondent

AMERICAN RADIO RELAY LEAGUE  
ADMINISTRATIVE HEADQUARTERS • 225 MAIN STREET • NEWINGTON, CONNECTICUT, USA 06111-1494  
TELEPHONE 860-594-0200 • FAX 860-594-0259 • INTERNET: [hq@arrl.org](mailto:hq@arrl.org) • WWW: <http://www.arrl.org/>

2021 is the 70<sup>th</sup> year of PPRAA ARRL affiliation.  
That is a long time!

# **You shop. Amazon gives.**

I'm somewhat dismayed that there are only 18 households contributing via their King Soopers accounts. Seems that many people had obtained the KS gift cards several years back, before they changed it to simply being a selection on their account.

Perhaps we should try to make it clearer just how it's done.

- 1) Go to [kingsoopers.com](http://kingsoopers.com).
- 2) Log in to your account.
- 3) Scroll down to, and select Community Rewards.
- 4) Search for and Add 'Pikes Peak Radio Amateur Association Inc.' (Organization Number MK867) as your target.

That's all it takes.

It shows (me) that I contributed \$18.85 last quarter. So, I guess mine made up slightly more than 10% of the total.

(Of course, maybe some PPRAA members could be directing contributions to another organization.)

Dennis

## **Amateur Radio Emergency Links Info**

Amateur Radio and Emergency Communications

<https://alertfind.com/amateur-radio-and-emergency-communications/>

Disaster Preparedness on a Budget

<https://couponfollow.com/research/disaster-preparedness-on-a-budget>

## **From the annals of PPRAA history**

### **February 1984:**

The February meeting will be held at a new location: Giuseppe's, at 7:30 pm. The Palmer House wanted to charge \$25 per meeting and wants the club to buy the coffee from the motel. The board decided to establish a hamfest committee to look into future possibilities for a larger hamfest starting in 1985. President Joe Quintana NØENM had to resign as president, and the club is looking for a new vice president, as Al Vrooman NØCMW fills the missing post. Bill KQØH was elected to fill Charlie Biggs board position vacated last month. The club will buy instructional video tapes for ham radio. The repeater committee has decided that a repeater would not be good due to the costs and a desire not to fragment the club. The Rocky Mountain Division ARRL Hamvention and Conference will be coming to Denver May 25 to May 27

### **March 1984:**

March meeting was held at the Guiseppe's Restaurant in the Baggage Room. Fifty-five members present at the February meeting. A short article on building a "passive" repeater on the front page. The Aurora Hamfest is coming up on March 18. The swapfest will be at the International Polka Palace on Busch St and 21st this year. Doug WBØMHP solves an RFI case, determining the radio was within FCC specs. Education Committee purchased ham radio tapes last month which will be used in the classes at North Jr. Pikes Peak Radio Amateur Association History Records 9 High School. Mike KØTER elected as VP to fill the vacancy from last month. Another board member resigns due to not enough hours in a day. NØDV Dave vacates his position this month. The club is short of committee chairmen, and is in need of presentations again. PPRAA supporting the Walk for Mankind on April 14. CCARC met on March 24 at Show Biz Pizza, hosted by the PPRAA.

### **April 1984:**

Sixty members came to the March meeting. A PPFMA representative came to the meeting to tell all about their repeaters. PPFMA dues were \$20. Leo WØGOW volunteers to pick up the interference committee. Swapfest prizes are a color TV, a Bearcat 210XL, and \$100 cash. Bruce Petrarca KXØE, ARES EC, is accepting applications for El Paso/Teller County ARES. Doc WØMCT elected to fill the vacancy left by NØDV. Bill KQØJ, down from Denver, and our Section Manager, moderated a discussion on ARES for the program. Also down were the SEC Bill Merit and Darla Richardson, section ACC. PPRAA is the only Colorado Special Services Club. The club will sell certain items from its inventory. ARES nets are

now on the 37/97 repeater on Wednesdays at 7 pm. See Jake NØCYR for membership forms.

#### May 1984

Jake NØCYR reports the 146.97 is now used for the ARES nets on Wednesdays at 7:00. The April meeting had 46 members and guests. Herb Moore of the NWS presented the program on weather patterns in the area. Rosie WAØMNL and Oak KØROL will run a club hospitality booth at the convention coming up. The August 12 picnic is set for the Black Forest pavilion. KØTER Mike will make a list of club equipment and determine what to do with the property. The Field Day will be at the Rampart Range Road with four stations. Jake NØCYR will cook breakfast. Mike KØTER proposed the club get a small trailer for club functions. The swapfest winners were James Putnam of COS (19- in color TV), Charlie Biggs KCØTI (the scanner), and Art KCØVL of Nathrop, CO (the \$100 cash award). Convention this month on May 25 through May 27.

#### June 1984

Apparently there was a special newsletter for the convention. (Anyone have a copy of that?) Thirty-nine members at Giuseppe's for the May meeting. The club approved a motion to spend \$800 to buy a used 15-foot trailer for club functions, and \$200 for repairs to get it in good shape. A committee was formed to oversee this. Gerry Johnson NØCWZ gave a program on balanced modulators. Next month's program will be Greg Utterback NBØU talking about VHF. Some discussion about lowering club dues. Club dues are \$12 regular and \$15 family. Jim Owens KR7J is moving to Rhode Island. A BASIC program for printing out QSL cards is published in this issue.

#### July 1984:

The club decides to try All the King's Men Restaurant for Saturday morning breakfasts, as the Kings Country Kitchen is closing. The new location is on Union across from East Jr. High. The club receives a certificate of appreciation from the March of Dimes for the help in the public service event. Another weather watching training coming up. The title is received for the club trailer. Greg NBØU gives a presentation on VHF/UHF propagation. Pete LaFosse NØLA becomes a new member. KL7IPV prints a BASIC program for calculating antenna dimensions. There is a list of club property to sell to the highest bidders. Send bids to the club mailing address.

## Parker Radio Association

PPRAA Team,

Be sure to join us for our weekly nets Monday and Tuesday evenings!

First, Monday, at 8:30pm, on D-Star XRF223B, the PRA holds its D-Star net. There is plenty of conversations from everything digital to the latest projects and devices... from DStar / DMR / Fusion / Brandmeister / Hotspots, and even CW. This can be accessed via your local hotspot. Also, many have linked via the W0CDS 2M repeater as well. Considering our KOPRA repeater is being relocated, using the W0CDS 2M side would be best (please follow common/courteous practice when linking).

Second, at 8:00pm on Tuesday, is the PRA weekly analog net on the W0CFI 448.675 – (100Hz) repeater. This is a great way to catch up on the happenings of the PRA and is a great environment to ask any question related to the hobby or to give yourself some bragging rights on a recent license, upgrade, or new piece of equipment.

We'll see you on the air!

73, KØPRA Your Friends at the Parker Radio Association

[www.facebook.com/parkerradioassociation](http://www.facebook.com/parkerradioassociation) parkerradio.org

[@ParkerCORadio](https://twitter.com/ParkerCORadio)

# ARRL Outgoing QSL Bureaus

[www.arrl.org/outgoing-qsl-service](http://www.arrl.org/outgoing-qsl-service)

ARRL affiliated-club stations may use the service when submitting club QSLs for its members in bulk ("pooling" their members cards together in one package) by indicating the club name inside the package. Club secretaries should check club affiliation on the ARRL web site to ensure that their affiliation is current. In a "pooled" package, each club member using this service **must also be an ARRL member**. Cards should be sorted "en masse" by prefix and a proof of membership should be enclosed for each ARRL member. QSLs for unaffiliated club calls may also be sent via the outgoing bureau to foreign destinations if the trustee of the club call is a member in good standing. The trustee's proof of membership must be included with the club call-QSLs.

# **PPRAA VE EXAMS**

## **(MONTHLY)**

PPRAA VE session has relocated and will be held at 10:00 am on the second Saturday of the month at Pikes Peak Regional Office of Emergency Management  
3755 Mark Dabling Blvd, Colorado Springs, CO 80907, USA

Organizer: [ve@ppraa.org](mailto:ve@ppraa.org)

**TESTING IS FREE.** Applicants will need the following items at the session:

- 1. A valid PHOTO ID**, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).
- 2. Your FRN NUMBER** (Please obtain in advance of the session).
- 3. A copy of your amateur radio license** (if any).
- 4. The ORIGINAL of any relevant CSCEs** you have **AND a PHOTOCOPY** for the VE Team to keep.

PPRAA VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams. Anyone passing their Technician Class examination at a PPRAA test session will receive a free year's membership to the Pikes Peak Radio Amateur Association.

Jim Bishop [kd0kql@hotmail.com](mailto:kd0kql@hotmail.com), 719 332-5283, 000PPRAA VE Contact



# **MARC VE EXAMS**

**(January, March, May, July, September, November)**

The Mountain Amateur Radio Club (MARC) VE Team conducts VE exam sessions in Woodland Park every odd month at 10 am on the first Saturday in the Community Meeting Room of the Woodland Park Library, 218 East Midland Avenue. The MARC VE Team is affiliated with the ARRL/VEC and examinations for all classes of license will be offered.

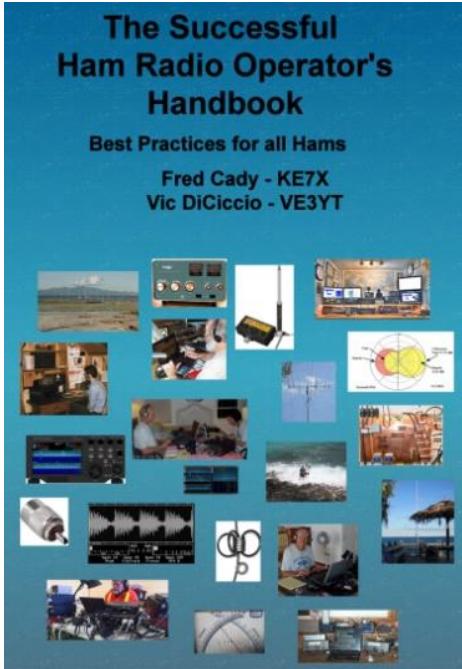
Full information, including driving directions to the Woodland Park Library, is available under “VE Sessions” on the MARC website at <http://www.nx0g.org/ve.html> or contact Wes Wilson (KØHBZ) at [k0hbz@arrl.net](mailto:k0hbz@arrl.net) or call (719) 687-8758.

If attending, please BE SURE to bring the following items to the session:

**A valid PHOTO ID**, driver's license preferred (if you do not have a valid photo ID, please call for alternative identification requirements).

- 1. Your FRN NUMBER** (now required – this includes children Please obtain in advance of the session).
- 2. Your ORIGINAL amateur radio license** (if any) **AND a PHOTOCOPY** for the VE Team to keep.
- 3. The ORIGINAL of any relevant CSCEs you have** **AND a PHOTOCOPY** for the VE Team to keep.
- 4. Cash, Check or Money Order for \$15** (standard ARRL VE Fee). Checks and money orders should be made out to MARC and covers all the different exams you wish to take at the VE session.

MARC VE Team policy, as with many VE Teams, is to not allow same day retests on failed exams. For already licensed hams, MARC members should be monitoring the MARC repeater system 146.820- or 448.650- (both 107.2 Hz) if you need help with talk-in. 73 Dean Buckhouse



## The Successful Ham Radio Operator's Handbook

This new book is aimed at new or returning hams to help them understand the practical aspects of the hobby, how to use their radios, build antennas and baluns, and get on the air successfully. In it you will find explanations of how the various parts of your ham radio - the transmitter and receiver – work, plus how these are being implemented using software defined radio technology. Operating techniques for VHF/UHF repeaters, HF radio DXing techniques, and the new digital modes are covered. Radio propagation, antennas, transmission lines, SWR and the mysteries of baluns are explained. Building your HF station, choosing a radio, connecting your radio to a computer, and mobile and portable operation are extensively covered.

Both the pdf and spiral-bound printed versions are available from Lulu.com, and the print copy is also sold by DX Engineering. You can find them via the links below:

<http://www.ke7x.com/successful/ordering-the-successful-ham-radio-operator-s-handbook>

Here is a link that describes the book in more detail:

<http://www.ke7x.com/successful>

Follow us on [www.facebook.com/KE7XBOOKS](http://www.facebook.com/KE7XBOOKS) to keep up-to-date on book news and to be notified of book discounts at [www.lulu.com](http://www.lulu.com).

This book has 267 pages, 211 figures and diagrams, and 53 tables of data to make understanding the sometimes complicated ham radio operations much easier. The book follows KE7X's philosophy of presenting material in several forms to accommodate people with different learning styles -- reading, visualizing, hands-on -- with the many figures and text explanations and there are hands-on exercises throughout the book that can help you learn

more about your particular radio.

Follow us on [www.facebook.com/KE7XBOOKS](https://www.facebook.com/KE7XBOOKS) to keep up-to-date on book news and to be notified of book discounts at [www.lulu.com](http://www.lulu.com).

One instructor for new and advanced ham classes has said, "This book is exactly what is needed. I've seen some other books targeting the new hams that are less than satisfying both technically and in content but this one is right on the mark and covers so much information that I so often get asked about, during and after teaching classes."

Here are more details on the content:

- With nearly 110 years of ham radio experience between them, the authors are still excited about the challenges this wonderful hobby offers. *The Successful Ham Radio Operator's Handbook* will guide you when exploring some of these.
- Its goal is to help new operators and returning old-timers learn about the breadth of exciting ham radio activities and challenges available today.
- It answers the question "Why is ham radio relevant in the Internet age?"
- It covers a wide range of topics, helping the reader to understand the excitement of different facets of ham radio and to choose a challenging and exciting activity to pursue.
- It helps the reader better understand how the radio works. Many hams only use a small fraction of the features of their radio. For example, if you understand how a noise blanker or a roofing filter or the AGC works, you will be able to more easily use these, and other, features of your radio to your benefit.
- It provides exercises designed to apply the knowledge to cement your understanding of how your radio works without being radio-specific. It is good for all makes and models.
- It helps the reader get enough background to understand much of the jargon hams who pursue special activities, such as the various digital modes, VHF contesting and moon bounce. It quickly takes the novitiate reader to higher level of understanding and provides URLs and websites that help the reader go deeper into new interests.
- Antennas remain a key area where all hams can still successfully experiment and create a key part of their station. This book provides information to help new hams get started cutting their own verticals and dipoles. It explains why some popular multiband antennas may have compromises that impact performance.
- It gives practical guidelines about choosing transmission lines and building and using baluns and chokes.
- Digital modes such as RTTY, PSK and the new WSTJ modes are explained. The computer-to-radio connections needed for these modes are discussed and illustrated.
- Many hams are motivated by public service and emergency preparedness. This book describes typical local emergency organizations and national networks.
- Hams who like to operate while traveling will find practical information on reciprocal international agreements and how to get permission to operate legally.

## Online Practice Test Sites



Study for your Amateur Radio License exam:

[Technician \(2018-2022\)](#)

[General \(2019-2023\)](#)

[Amateur Extra \(2019-2020\)](#)

[Other...](#)

## HamExam.org Amateur Radio Practice Exams

Log in using **Error! Hyperlink reference not valid.** or click [register](#) to create an account. If this is your first visit to the site, please read my brief [introduction](#).

QRZ.COM <https://www.qrz.com/hamtest/>

Eham <https://www.eham.net/exams/>

AA9PW.COM

**Membership Application**  
**Pikes Peak Radio Amateur Association, Inc.**  
**P.O. Box 16521, Colorado Springs, Colorado 80935**

Date \_\_\_\_\_  New Membership  Renewal

Name \_\_\_\_\_ Nickname \_\_\_\_\_

Email address \_\_\_\_\_ Address \_\_\_\_\_

Telephone \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Call Sign \_\_\_\_\_ License Class \_\_\_\_\_

Are you an ARRL Member? " Yes " No

Additional family members residing at same address

Name \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL: "Y "N

Name \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL: "Y "N

Name \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_ ARRL: "Y "N "

" Full Membership \$15/yr                  " Family Membership \$18/yr

" Full Membership - over age 65 \$10/yr    " Family Membership - all over 65 \$12/yr

" Free - VE Signature required \_\_\_\_\_

Mail to: PO Box 16521, Colorado Springs, CO 80935, with check or money order or Scan and email to treasurer@ppraa.org, and pay with Paypal on www.ppra.org or Deliver to PPRAA Treasurer in person